B. Structures other than Buildings.

From numerous inscriptions found in the State, it might be inferred that ancient rulers not only built palaces for themselves but also provided the people with the necessary amenities of life.

Ornamental Wells, Ponds and Tanks.

Thus we are told in an epigraph dated in 1234 A.D. that the towns in the Hoysala country were surrounded with gardens, that many tanks filled with lotuses were formed in their vicinity and that groves were planted from *yōjana* to *yōjana* (about nine miles) for travellers to rest in (*E.C.* IX Arsikere 82). Of the Mysore king Dodda Dēva Rāja Wodeyar, it is said that he made wells, ponds and tanks, with *chattras* or feeding houses from road to road (*E.C.* XII Kunigal 37). The importance of a good water supply, whether for irrigation or for the use of towns, seems to have been early recognized. We accordingly find references to the erection of dams to rivers, from which channels were led off, and to the construction of wells and tanks and reservoirs in almost every period. The oldest tank in the State is, perhaps, the Panamankere (*i.e.* Pranavēsvara's tank) at Tālgunda, Shikarpur Taluk, which has been assigned to the 4th century A.D. (*E.C.* VII Shimoga, Shikarpur 176, dated in about 400 A.D.). Puliyamma, Perggade of the Santalige Thousand, who had attained the rank of a great minister, is said to have constructed this tank in 935 A.D. and to have made a grant of land for it and made over the same to the people of the town on condition of certain annual payments being kept up by them (*E.C.* VII—Shimoga i, Shikarpur 194 and 322 both dated in 935 A.D.). It is probable he restored or repaired the tank, for it is undoubtedly earlier than the 10th century. The Akale-Samudra, at Gundalhalli in Pavagada Taluk, named after Akaleti, who built it, is referred to in

an inscription which, on palæographical grounds, has been set down to 754 A.D. A lithic inscription of Srī-purusha, the Ganga king, dated in 760 A.D., found at Halkur, Sira Taluk, refers to one Addepara building a tank and records a grant for its maintenance. To the same century or before, belongs the tank at Bēthamangala, on the Pālār river in the Kolar District. It breached more than once and was restored, once in 950 A.D. and again in 1,155 A.D. (*E.C.* Bowringpet, 4 and 9). In the 10th century, the local priest of Āvani in the Mulbagal Taluk, dug some tanks (*E.C.* X Mulbgal 65), while in the 12th century, the Kadyala chief formed others in the Tumkur Taluk (*E.C.* XII Tumkur 9). In 1358, a number of tanks were constructed by one Bhatt, who planted lines of trees on the four sides and consecrated them with due religious ceremony. An inscription found in the sluice of the Kunigal tank gives the interesting information that it was built in 1394 A.D. by Irugappa, the Jaina general of Harihara II, the Vijayanagar king and the author of the Sanskrit lexicon *Nānārtha Ratnamāla.* This tank is a famous one. According to local tradition, the Emperor Nriga, his horse and dog were, all three of them, cured of leprosy on bathing in a pond situated in this tank. (*M.A.R.* for 1919, para 31). Many beautiful step-in wells have been constructed from time to time. These have not only served the utilitarian purposes for which they were intended but also added to the beautification of the places in which they were constructed. Thus in front of the Chitra-matha at Edeyur, Kunigal Taluk, there is a beautiful well built with dressed vertical slabs all round and adorned with a well carved stone parapet. The well dates probably from *Circa* 16th century. A pond of more than ordinary interest is the Dalavāyi Honda, about 2 miles west of Bistuvalli, Jagalur Taluk, which is symmetrical in form, about 30 yards square, with flights of steps on all the four sides. A parapet

wall goes round it and it is ornamented at the middle on each side. Though the pond is mostly buried now, it should have been, when full, an excellent sheet of water. It was, according to a local chronicle, constructed by Muddanna, the *Dalvāyi* (or general) of Hiri Medakēri Nāyaka, about the close of the 17th century. He also built, to the north, a fine *mantapa* of dressed stone supported by sculptured pillars for the use of the God Ranganātha of the adjacent hill known as *Konāchal Guddā*. One of the sculptures is an ingenious combination of three cows, with one body and three heads in different postures. At Kavale Durga there are well constructed ornamental ponds, one of which is the Sānti-Gange pond. They date from the time of the old Nagar dynasty (18th century). At Nagar, there is the Basavanna-byāna, which is an old park and pleasure garden, covering some 73 acres. The high road runs through it, cutting off a portion of about 10 acres to the east. At the farthest point to the west is an enclosure containing a flower garden and a number of ornamental ponds and fountains, the principal of which is called the Dēva-Ganga pond. The sluice by which the fountains were fed from a neighbouring tank is now choked up.

At Malandur, near Anantapur, included among the remains of the fine Lingāyat Mutt called Champakasadasi, is a splendid tank, about 200 feet by 144 feet, built round with laterite steps. The plan adopted in connection with it is, as in the case of the Basavanna-byāna at Nagar, abovementioned, a *linga* temple in the middle of a large tank or pond, surrounded by water (like the golden temples of the Sikhs at Amritsar), which is approached by a stone causeway. The beautiful *honda* in front of Ranadhulla's mosque, which originally belonged to a Hindu temple, has already been mentioned. The fine large pond stepped in all sides and surrounded by a

wall with gates surrounded by towers, at Sravana Belgola, was built by Chikka Dēva Rāja Wodeyar of Mysore, about 1704 A.D. He probably enlarged the original pond, which gives its name (Belgola) to the place. In 1653, Bari Malik, the Bijāpur Governor, built the tanks called Vali Surūr, in Channagiri Taluk. The inscription recording its construction refers to the merit acquired by all who assist in the formation of a tank. It runs thus: "The quail and the boar, the she-buffalo and the elephant, the teacher and the performer,—these three went to *Svarga* (or paradise)." The explanation given is that a quail once scraped a hollow in the ground to nestle in; a boar came and made it larger; a buffalo and an elephant each in turn enlarged it still more; a holy man then pointed out that it could be made into a tank or pond, and the king to whom this advice was given carried it out. For their shares in this work of merit they all went to *Svarga* (*E.C.* VII Channagiri 43, 44). A water supply scheme carried out under the orders of Bukka Rāya in 1388 is described in another inscription (*E.C.* X Goribidnur 6). The water was brought into the town concerned by a channel made from the river Pennār to a tank about ten miles from it. The construction of a dam across the Haridra at Harihar in 1410 is referred to in an inscription dated in that year (*E.C.* XI Davangere 23). It soon breached but was restored in 1492 (Davangere 29). A dam on the Pālār, which had been long ruined, was restored in 1416 (*E.C.* X Mulbagal 7). The chief of Nagamagala made a new dam in the Cauvery in 1460 and led a channel from it to Harahu (*E.C.* III Seringapatam 139). The conditions of the contract for making a channel, in 1397, included the present of a horse and bracelets to the contractor. But it was stipulated that these, as well as the funds advanced, were to be returned if water did not flow between certain specified points.

City Architecture and Town Planning.

Some of the particulars given above show that in olden days town-planning was understood, though only in a limited sense, and the necessity for devising adequate facilities for the supply of water and other requirements to sites was well realized. We have, indeed, evidence in certain inscriptions that important cities were divided into *puras* and *Brahmapuris* with provision for medical aid in them. Thus Belagāmi, we are told, included five *mathas*, three *puras* and seven *Brahmapuris*, with three medical institutions (*E.C.* VII Shikarpur 123, 119, 100 and *E.C.* VIII Sorab 277). Similarly, Talakād—Rājarājapura—contained seven *puras* and five *mathas* (*E.C.* III Malavalli 109). Agara, again, comprised three cities and eighteen *Khampanas* (*E.C.* VIII, Tirthalli 133, 197). Another *pura* known is the *Manyapura* (modern Manne) mentioned in Kondajji plates of Srīpurusha, the Ganga king, dated in the 7th year of his reign (or 733 A.D.). It was apparently the capital of the Ganga Kingdom at the time. That even a cursory study of the remains of these old towns, from the point of view of City architecture, is likely to yield valuable results has been proved beyond doubt by competent town-planning experts. In recent times, considerable attention is being paid by City and Urban Municipalities in the State to the principles underlying town-planning in its intimate relation to City architecture under expert advice.

Bridges.

Among other structures of an utilitarian character built by the ancient kings of Mysore are bridges over rivers. The ornamental bridge constructed by the Ganga king Sivamāra (*Circa* 713 A.D.) over the Kilini river to the north of Keregodu is perhaps one of the earliest ones known so far. (*E.C.* III, Mandya 113). Many centuries later, two other bridges, both purely Hindu in style, were built. These are the Wellesley Bridge over the Cauvery at Seringapatam, erected in 1804, by Dewān Pūrnaiya

and named after the Marquis of Wellesley, the Governor-General of India, and a similar bridge over the same river at Sivasamudram, erected in 1832. Both these bridges are composed of rough stone pillars, firmly let into the rocky bed of the stream. These support stone brackets, on which rest the stones forming the frame work of the bridge, upon which again the floor of the roadway is laid. The rude solidity of these two structures has been proof against all the highest floods of the river, and they still serve, especially the former, for the transit of a great and increasing traffic. A projected bridge over this river also deserves mention. De Havilland, a well-known Military Officer who afterwards served as Chief Engineer of Madras, proposed the construction of a brick arch, of a span greatly exceeding anything that had at that time been attempted. On his design being set aside as visionary, he resolved to demonstrate its practicability, and thus built the great arch (112 feet span) across the garden attached to his own house, where it still stands as a monument of his skill. It is still known as the De Havilland arch at Seringapatam. He also designed the large room without pillars in the old Residency at Mysore, and the wide circular roof of St. Andrew's Kirk at Madras. (For the bridges erected in the last and present centuries, see Volume III—Chapter X of this work).

II. Military Architecture.

Of Military structures erected by previous rulers, perhaps the most important were forts, for which there was ample need and scope. There is hardly any hill or mountain top in Mysore which has not been fortified. An inscription of the time of Vishnuvardhana gives a list, for instance, of important forts which he captured (*E.C.* IV Nagamangala 70). In the Tumkur District, there Forts.